

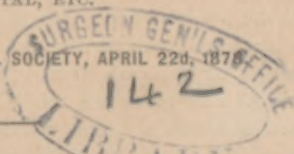
Duhring (L. A.)

A Case of Tinea Tricophytina Unguium.

BY LOUIS A. DUHRING, M.D.,

PROFESSOR OF SKIN DISEASES IN THE UNIVERSITY OF PENNSYLVANIA, DERMATOLOGIST
TO THE PHILADELPHIA HOSPITAL, ETC.

READ BEFORE THE PHILADELPHIA COUNTY MEDICAL SOCIETY, APRIL 22d, 1878.



[Reprinted from the MEDICAL AND SURGICAL REPORTER of April 19th, 1878.]

*August 3rd
1879*

The case which I have the honor of showing the Society this evening is one exhibiting a quite rare form of nail disease, designated tinea tricophytina unguium or onychomycosis trichophytina. The condition may be briefly defined as an invasion of the nail by the vegetable growth known as the tricophyton. Not only the surface but the entire substance of the nail is thus affected, causing opacity and yellowish discoloration, together with increase in bulk, more or less fissuring, fracture, and ultimately crumbling of the nail. The notes of the case are as follows:—

The patient, J. D., is a single woman, of medium size, but of spare frame, twenty-five years of age. She has light brown hair. Her occupation is that of a weaver, which she has followed for a number of years. She looks weakly and frail, but according to her statement she has until lately always enjoyed average general health. Her father and sister died of consumption.

The nail disease manifested itself about six years ago, two nails, the thumb and index finger of left hand, being attacked at the same time. These were involved to about the same degree that we now see the index finger nail of the right hand. The disease first showed itself around the free border of the nails. It gradually, in the course of six months, took possession of the whole of both nails, after which, without

treatment, it slowly disappeared, so that by the end of the year from the commencement these two nails were again perfectly healthy.

About four months after the two nails just referred to were invaded, "ringworms," as she terms them, made their appearance on the fingers of the diseased nails. They gradually crept up the fingers, over the back of the hand and wrist, and later appeared upon the arms and upon the general surface. She states that she has had these lesions (and there is, from her description of them, every reason to believe that they were truly patches of tinea circinata), off and on, quite constantly, for the last five and a half years. They have occurred chiefly about the wrists and knees. They would very frequently completely encircle the wrists, and were always of a more aggravated type on the left than on the right wrist. They were particularly prone to occur in the flexures of the knees. They were also of very frequent occurrence about the back of the neck and around the waist. The face never manifested any signs of the disease. The lesions of tinea circinata over the general surface were of all sizes, from a split pea to a silver half-dollar, beginning usually as irregularly rounded, split-pea sized patches, and in time forming smaller or larger rings. Often they would coalesce, constituting variously sized, irregularly shaped, more or less indistinctly defined patches. They lasted a

variable time, from a few weeks to as many months. She states that she has often counted upon her a dozen or more distinct lesions, and that since the commencement she has certainly had hundreds of them. They were never very red nor inflammatory, but were very itchy.

As stated, two finger nails were attacked four months before any disease of the skin appeared. About one year later the other nails began to be affected in the same manner as the first two nails, so that within a year and a half all the nails which are now involved had been attacked. The thumb-nail of the right hand, which was one of the two nails first invaded, was very badly diseased, even more so than any at the present time. The thumb was, for some time, very much swollen, so that she was unable to wear a glove. It will be remembered that this nail recovered within a year from the date at which it began, without treatment. All of the diseased nails have been better and worse from time to time, but none of them within the last five years have shown any disposition to return to health. They have never been the seat of any subjective symptoms. They grow, after cutting, quite as rapidly as the healthy nails.

At the present time the general surface of the body is entirely clear of disease, and she states, has been so for at least a year. She has not noticed any patches of *tinea circinata* during this period.

Five nails are affected; the nails of the thumb and little finger of left hand, and the index, middle and little fingers of the right hand. The other nails are perfectly healthy, and are in all respects well shapen and symmetrically formed. The toe nails appear to be sound.

As they are all very similarly involved, the same description will apply to all of them. They are firmly seated on their beds, showing no tendency to become detached. They are markedly thickened, in some places treble the normal thickness, two of them being considerably raised up, and in the form of the exterior of an oyster shell, while the others are even flatter than normal. Their surfaces are uneven, rough and rugged, depressions and eminences existing here and there quite conspicuously. Furrows are also present, running both transversely and longitudinally. Several of the nails are split up their entire length; others are not at all fissured. The free borders are in all instances broken, ragged, and more or less split

to the quick. There is, moreover, marked thickening here, together with a mass of dense, soft, broken-down nail substance, of a dirty greenish-yellow color.

The color of the body of the nails is pale-yellowish, with here and there opaque, whitish, ill-defined specks, the size of small and large pin-heads. Striæ of a greenish-grayish color, caused by extraneous matter collecting about the fissures, are also present. Here and there the nail substance is formed into irregular ridges, or a fragment of nail has become detached, leaving an irregularly-shaped cavity, or a shreddy surface. The nails are in some places soft, and can be readily scraped away, while at other points they are still quite hard, and can only be removed by paring them.

They are manifestly involved throughout their entire substance, from their external surface to their beds, for the yellowish infiltration is seen to lie deeply imbedded. Moreover, by scraping and cutting it is seen that the disease penetrates deeply. The infiltration of the fungus exists more extensively at some points than at others, as shown by the presence of the whitish and yellowish specks referred to, representing foci of disease. All the nails, moreover, are invaded throughout their whole surface, from their borders to their roots, and from side to side.

Upon cutting into the more diseased nails, or even upon scraping them with a blunt instrument, the nail substance is found to be soft, and to break down or to split into laminæ or fragments, varying in size and shape. The free borders are much more brittle and friable than the central portion of the nails; still, the whole nail substance is noted to be the seat of more or less disease.

Under the microscope both the scrapings and parings show the *trichophyton* fungus in abundance. It should be stated that the specimens, previous to examination, were first soaked for five minutes in liquor potassæ, to break up the adherent cells of the nail, after which they were washed in distilled water, and examined in a saturated solution of acetate of potassium. The liquor potassæ plays an important part in destroying a certain amount of nail substance, thus rendering the fungus more clearly visible. It is in all cases an indispensable agent in the examination of the several vegetable parasites of the skin, whether attacking the epidermis, hair, or nail. Although, as has been stated, the

growth is present in quantity, it will not be found in every fragment of nail substance that may be submitted to the microscope. In many small pieces, and also in some specimens of nail dust or filings, it may not be found, or in such small quantity, and so broken, as to be scarcely recognizable. In the examination of the vegetable parasites of the skin, it is well known to those accustomed to study these structures that it is often quite impossible to pronounce positively upon one or two spores, or a fragment of mycelium. Various formations and bodies common to microscopic fields may readily be mistaken for vegetable organisms. Indeed, where the growth is scanty, it is not very uncommon for even skilled microscopists to be mistaken, in their interpretation of certain structures.

The growth in the present case is unquestionably the trichophyton, the commonest fungus that invades the integument of man, being found as the cause of *tinea circinata*, *tinea tonsurans*, *tinea sycosis* and *tinea trichophytina unguium*. [Specimens were here exhibited under the microscope.] It is characterized by mycelium and spores, both elements being, as a rule, in every possible state of development. In the case before us we observe that the mycelium largely predominates, there being, indeed, but few spores present in the majority of specimens examined. This occurrence is usually the case, the growth as found in the nail appearing very much in the manner as in *tinea circinata*. The mycelium is of all sizes and of all shapes. In some specimens it is luxuriantly developed, long, branching, and of great calibre, while in others it is small, narrow, and manifestly stunted. It varies in form and quantity with the nail upon which it exists, and with external conditions. As a rule it grows most rapidly and luxuriantly where heat and moisture are abundantly provided, whether naturally or artificially. Beyond the presence of the fungus there is nothing worthy of special note to be referred to. As in all cases of parasitic disease of the nail, whether of *tinea favosa* or of *tinea trichophytina*, the cells of the nail substance are more or less dry, shrunken and degenerated, showing here and there variously sized granules.

The notes describing the appearance of the disease, which I have read, were made previous to the patient having been placed upon external treatment, about two months since. The remedies directed consisted in the daily use of the

knife, to cut and scrape the nail substance away as much as possible without causing pain, followed by the application of strong potash soap and water, with a brush, and afterward by an alcoholic solution of corrosive sublimate, three grains to the ounce. As will be seen, the nails have been considerably changed by this treatment. Internally she has been taking preparations of iron, and small tonic doses of arsenic, which I regard as important therapeutic aids in such long continued and obstinate cases of parasitic disease as the present. As a parasiticide, the hyposulphite of sodium in solution (3j ad. 3j) may be favorably mentioned. It should be applied with a cloth tied on the nail, and repeated often.

Within the last month the patient has complained of a new symptom, in no way connected with the nail disease, but which may nevertheless be mentioned. She has, on some four or five occasions, at irregular intervals of a few days or several weeks, suffered from sudden and painless hemorrhages from the bowel. They have in each instance been sudden, the discharge taking place without previous warning to the patient, and unaccompanied with pain or other like symptom. In no instance has the hemorrhage been the result of undue exertion. The quantity of fluid lost varied on different occasions, from a cupful to, she thinks, several pints. It appeared to her as being quite pure blood, of a bright red color. It did not ooze, but gushed forth in volume. Only when it occurred copiously was it followed by weakness and prostration. She has never experienced any symptom of the kind before; nor has she suffered at any time from hæmoptysis or from epistaxis. Menstruation has always been perfectly normal as to time, quantity, and duration. It has taken place normally during the past three months, and has not been influenced in any way by the hemorrhage from the bowels. The bowels have always been somewhat constipated, and are so at the present time.

Upon examination of the great toe nail of the left foot, to which the patient has lately called my attention, I find it to be opaque, and of a bright, pale-yellow color. This condition has appeared within the last month. No other nail is so affected. The form of the nail is natural, and the surface smooth and polished, the cloudiness and yellowish color being the only symptoms of disease; and were one not

looking for parasitic disease the true nature of the condition would, in all probability, be overlooked.

Within the week my attention has also been directed to several small split-pea sized, irregularly rounded, pale-reddish, slightly scaly lesions on the left forearm and shoulder, which have recently made their appearance. They are found to be the earliest manifestations of tinea circinata, the scales of which, under the microscope, show the trichophyton plainly. Thus, after an interval of more than a year these lesions again manifest themselves, and probably will continue to do so for some time, unless treated promptly and vigorously. [Patient exhibited.]

Disease of the nail due to the presence of the trichophyton is of rare occurrence. Köbner (*Virchow's Archiv*, vol. xxii, 1861) reports that out of one hundred cases of tinea trichophytina he encountered but two examples where the disease attacked the nails. These occurred in two sisters, children of eight and ten years, who were suffering with tinea tonsurans. Two finger nails and two thumb nails were involved in one case, and the two thumb nails only in the other case.

Purser (*Dublin Quarterly Journal of Medical Science*, November, 1865) also gives the notes of two cases, one a young lady, the other a middle-aged man. In the case of the young lady there was a previous history of tinea circinata of the finger, but no such disease existed at the time the case came under observation. With the other case there was no history of any previous tinea circinata, nor was there any disease of the skin existing at the time. One finger nail and two toe nails were attacked.

Fagge, of London (*Transactions of the Clinical Society of London*, 1868; and *Guy's Hospital Reports*, vol. xv, 1869) reports four examples. The same observer exhibited two other cases before the London Pathological Society in 1870 (*Lancet*, February 5th, 1870).

Anderson, of Glasgow, in his analysis of 11,000 consecutive cases of skin disease (London, 1872), does not appear to have met with the affection. Tinea trichophytina, according to his statement, was encountered one hundred and seventy-eight times, occurring on the general surface, scalp and beard. There is no mention of it having in any of the cases involved the nails.

White, of Boston (*Boston Medical and Surgical Journal*, 1876), in an analysis of 5000 cases of skin disease, reports one hundred and eighty cases of tinea trichophytina as occurring upon the scalp, general surface and beard, but does not speak of the disease as having in any case shown itself in the nail.

In my own experience the affection is decidedly a rare one. It has certainly been several years since I have met with a case. At the same time the condition doubtless occurs more frequently than would be inferred from these statistics, being either not brought to the notice of the physician by the patient, or, as I think is more likely the case, passes unrecognized as to the true nature of the disease.

The case that I have described is particularly interesting in the fact that the disease of the nail preceded the affection of the skin. In the majority of cases the nail disease follows the tinea circinata. The occurrence of the disease in the toe nail is also a rarity, some authors, as Dr. Fox (*Epitome of Skin Diseases*, London, p. 69), even making the statement that it is never found here. The long duration and the persistency of the tinea circinata is also worthy of remark. The facts, that two of the finger-nails that were severely attacked recovered within a year, without treatment, and that the tinea circinata recurred after a year's absence, are points that go to show that the disease, under certain conditions, even in the nail, inclines to perish of itself, and that where the soil is favorable it may recur, even at long intervals, for an indefinite period.